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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/511,668	10/18/2004	Shuichi Ohkubo	P/1929-97	4233

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EXAMINER

JONES, CRYSTAL L

ART UNIT PAPER NUMBER

2627

DATE MAILED: 06/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/511,668	OHKUBO, SHUICHI	
	<b>Examiner</b>	<b>Art Unit</b>	
	Crystal Jones	2627	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 May 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2,5,6,9-11 and 14-16 is/are pending in the application.
- 4a) Of the above claim(s) 3,4,7,8,12 and 13 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2,6,11 and 15 is/are allowed.
- 6) ☒ Claim(s) 1,5,9,10,14 and 16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 October 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election of claims 1, 2, 5, 6, 9-11 and 14-16 in the reply filed on May 15, 2006 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

### ***Drawings***

1. Figure 5 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 5 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Horie et al. (U.S. Patent 5,581,539).

Regarding claim 5, Horie et al. disclose an optical information recording medium (Fig. 1) in which light is projected in a spot to thereby record/reproduce information and in which at least a recording layer (Fig. 1, element 3) is disposed on a substrate (Fig. 1, element 1) having a guide groove for tracking of the spotted light and in which the light is projected in the spot to the recording layer from the side of the substrate to record the information both in a first portion of the recording layer corresponding to a flat portion between mutually adjacent guide grooves (Fig. 3, element 8) and a second portion of the recording layer corresponding to the inside of the guide groove (Fig. 3, element 9), wherein recording marks with mark lengths  $nT$  to  $mT$  (where  $T$  is a unit length,  $n, m$  are integers of one or more,  $n < m$ ) are formed on both the first and second portions (see marks of Fig. 5), and an amplitude  $IL_1$  of a reproduced signal from the longest recording mark with the mark length  $mT$  recorded on the first portion, and an amplitude  $IL_2$  of a reproduced signal from the longest recording mark with the mark length  $mT$  recorded on the second portion satisfy a relation of  $1 < (IL_2/IL_1) < 1.3$  (Col. 29, lines 30-48. Horie et al. do not disclose signal amplitudes varying with mark length. Land signal amplitudes are greater than groove signal amplitudes as shown in Fig. 8 resulting in  $0.5 < (IL_1/IL_2) < 2$  which is equivalent to  $0.5 < (IL_2/IL_1) < 2$ ).

Regarding claim 14, Horie et al. disclose a method of recording/reproducing optical information, comprising the steps of: projecting light in spots with respect to both first and second portions of a recording layer of the optical information recording medium according to claim 5; and forming recording marks having mark lengths  $nT$  to  $mT$  to perform recording (see marks of Fig. 5), so that  $IL_1$  and  $IL_2$  satisfy a relation of  $1 < (IL_2/IL_1) < 1.3$  (Col. 29, lines 30-48. Horie et al. do not disclose signal amplitudes

varying with mark length. Land signal amplitudes are greater than groove signal amplitudes as shown in Fig. 8 resulting in  $0.5 < (IL_1/IL_2) < 2$  which is equivalent to  $0.5 < (IL_2/IL_1) < 2$ .

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 9, 10, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Horie et al. (U.S. Patent 5,581,539) in view of Kondo (U.S. Publication 2003/0053404).

Regarding claim 1, Horie et al. disclose an optical information recording medium (Fig. 1) in which light is projected in a spot to thereby record/reproduce information and in which at least a recording layer (Fig. 1, element 3) and a light-transmitting layer (Fig. 1, elements 2 and 4) are disposed in this order on a substrate (Fig. 1, element 1) having a guide groove for tracking of the spotted light to record the information both in a first portion of the recording layer corresponding to a flat portion between mutually adjacent guide grooves (Fig. 3, element 8) and a second portion of the recording layer corresponding to the inside of the guide groove (Fig. 3, element 9), wherein recording marks with mark lengths  $nT$  to  $mT$  (where  $T$  is a unit length,  $n, m$  are integers of one or more,  $n < m$ ) are formed on both the first and second portions (see two marks of Fig. 5), and an amplitude  $IL_1$  of a reproduced signal from the longest recording mark with the

mark length  $mT$  recorded on the first portion, and an amplitude  $IL2$  of a reproduced signal from the longest recording mark with the mark length  $mT$  recorded on the second portion satisfy a relation of  $1 < (IL1/IL2) < 1.3$  (Col. 29, lines 30-48. Horie et al. do not disclose signal amplitudes varying with mark length. Land signal amplitudes are greater than groove signal amplitudes as shown in Fig. 8 resulting in  $0.5 < (IL1/IL2) < 2$ ).

Horie et al. fail to disclose light projected to the recording layer from the side of the light-transmitting layer.

Kondo discloses light projected to the recording layer from the side of the light-transmitting layer [0036].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the recording medium of Horie et al. with one of Kondo to achieve a medium in which light can be projected to both sides of the medium.

Motivation for such combination is versatility.

Regarding claim 9, Horie et al. disclose the optical information recording medium according to claim 1, as noted in the obvious combination above, wherein the recording layer is formed of a material whose optical reflectance or phase changes by irradiation with laser light (Col. 16, lines 19-23).

Regarding claim 10, Horie et al. disclose a method of recording/reproducing optical information, comprising the steps of: projecting light in spots with respect to both first and second portions of a recording layer of the optical information recording medium according to claim 1, as noted in the obvious combination above (see marks of Fig. 5); and forming recording marks having mark lengths  $nT$  to  $mT$  to perform recording, so that  $IL1$  and  $IL2$  satisfy a relation of  $1 < (IL1/IL2) < 1.3$  (Col. 29, lines 30-48.

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Horie et al. do not disclose signal amplitudes varying with mark length. Land signal amplitudes are greater than groove signal amplitudes as shown in Fig. 8 resulting in  $0.5 < (IL_1/IL_2) < 2$ .

Regarding claim 16, Kondo discloses a method of recording/reproducing optical information, having a step of projecting light in spots using an objective lens with respect to both first and second portions of a recording layer using the optical information recording medium according to claim 1, as noted in the obvious combination above, wherein assuming that a wavelength of the light is  $\lambda$ , a numerical aperture of the objective lens is NA, and a shortest mark length of the recording mark is ML,  $0.25 < NA \cdot ML / \lambda < 0.38$  is established (Using the values of Table 5, NA=0.9, ML=152 nm,  $\lambda=370$  nm, and  $NA \cdot ML / \lambda = 0.37$ , therefore  $0.25 < NA \cdot ML / \lambda < 0.38$  is established).

### ***Allowable Subject Matter***

4. Claims 2, 6, 11, and 15 are allowed.

Regarding claims 2 and 6, no reference alone or in combination discloses a first ratio of signal amplitudes varying with mark length in one region compared to a second ratio of signal amplitudes varying with mark length in a second region.

### ***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kondo et al. (U.S. Patent 6,580,678), Nishiuchi et al. (U.S. Patent 6,411,592), and Ohno et al. (U.S. Patent 5,745,475).

Kondo et al. disclose comparing a reproduced signal amplitude from a short mark length and a long mark length but do not disclose land/groove recording such that this ratio is compared to a similar ratio in another region.

Nishiuchi et al. disclose a mark length difference depending on a signal amplitude from a reproduced signal obtained from a land and groove region but do not numerically disclose the nature of this dependence.

Ohno et al. disclose a reproduced signal amplitude from a land greater than a reproduced signal amplitude from that from a groove but do not disclose a corresponding value.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Crystal Jones whose telephone number is 571-272-2849. The examiner can normally be reached on Monday through Friday, 8:30 a.m. to 6 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on 571-272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CJ

  
WAYNE YOUNG  
SUPERVISORY PATENT EXAMINER